

Title (en)
PLASMA ILLUMINATION DEVICE WITH MICROWAVE PUMP

Title (de)
PLASMALEUCHTUNGSVORRICHTUNG MIT MIKROWELLENPUMPE

Title (fr)
DISPOSITIF D'ÉCLAIRAGE AU PLASMA À POMPAGE À MICRO-ONDES

Publication
EP 3208827 A4 20180704 (EN)

Application
EP 15850172 A 20151007

Priority
• RU 2014141360 A 20141014
• RU 2015000651 W 20151007

Abstract (en)
[origin: EP3208827A1] A plasma illumination device with microwave pump contains a hermetic housing, provided with a lid with an aperture, in which are axially-positioned a magnetron, and a power source which feeds power to the magnetron. The device contains: a microwave resonator, which is positioned coaxially with the housing and has a translucent side wall and end wall, and a reflective bottom which is installed in the aperture of the housing lid; and an electrodeless plasma lamp, installed in the microwave resonator, in the region of the antinode of the oscillations, with the ability to rotate on a support rod, which rod is affixed by the other end thereof to a drive shaft, and the axis of which is coaxial to the axis of the housing. A coaxial line of communication passes parallel to the axis of the housing and allows for transmitting microwave energy from the magnetron to the microwave resonator, and is provided with a communication loop at the end thereof, said loop being positioned in the microwave resonator. The illumination device contains: a plurality of heat sinks, which are positioned on the inner walls of the housing and which transfer heat from, installed in the housing, the magnetron and power source, which generate heat which is drawn into the external environment via the wall of the housing; and also a translucent hermetic hollow cylinder, which is installed coaxially and hermetically on the lid of the housing above the microwave resonator, and which is used for protecting the microwave resonator against the effects of the external environment.

IPC 8 full level
H01J 65/04 (2006.01); **H01J 61/34** (2006.01); **H01J 61/52** (2006.01)

CPC (source: EP US)
H01J 61/30 (2013.01 - US); **H01J 61/34** (2013.01 - EP US); **H01J 61/36** (2013.01 - US); **H01J 61/52** (2013.01 - EP US);
H01J 65/044 (2013.01 - EP US)

Citation (search report)
• [A] US 5525865 A 19960611 - SIMPSON JAMES E [US]
• [A] EP 1560256 A2 20050803 - LG ELECTRONICS INC [KR]
• [A] US 5594303 A 19970114 - SIMPSON JAMES [US], et al
• [A] WO 2014134596 A2 20140904 - PARK SOO YONG [KR]
• See references of WO 2016060590A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 3208827 A1 20170823; **EP 3208827 A4 20180704**; **EP 3208827 B1 20190424**; RU 2578669 C1 20160327; US 2017271142 A1 20170921;
US 9972484 B2 20180515; WO 2016060590 A1 20160421

DOCDB simple family (application)
EP 15850172 A 20151007; RU 2014141360 A 20141014; RU 2015000651 W 20151007; US 201515519095 A 20151007